

Description

Slat System for Picket Barriers

BACKGROUND OF INVENTION

FIELD OF INVENTION

[0001] This invention relates to fences, more particularly to a slat system that can be incorporated into picket barriers, which barriers comprise a series of parallel spaced-apart extending rails supported by posts and having a plurality of pickets therethrough.

THE PRIOR ART

[0002] Searches were conducted on this invention and the following patents were uncovered in these searches.

[0003] *U.S. PAT. NO. INVENTOR. DATE*

[0004] 3,389,931. St. John. Jun. 25, 1968

[0005] 3,879,017. Maxcy. Apr. 22, 1975

[0006] 4,062,522. Lepetri. Dec. 13, 1977

[0007] 4,586,697. Tornya. May 06, 1986

[0008] 5,015,119. Schmanski. May 14, 1991

[0009] 5,480,126. Teasdale. Jan. 02, 1996

[0010] 5,725,201. Parth. Mar. 10, 1998

[0011] 6,260,828. English. Jul. 17, 2001

DISCUSSION OF PRIOR ART

[0012] Picket barriers, fences, railings, and the like (for example, wrought iron fences, ornamental fences, railings, etc.) generally are not private barriers. A private barrier could be described as--but not limited to--one that offers a place of seclusion from observation, noise, and/or company among other things. However, many of the characteristics that make picket barriers popular and attractive may also be very desirable in a privacy barrier. These desirable characteristics could include the aesthetic look, the strength, and the security that numerous types of picket barriers provide. For example, many individuals prefer the strength, security, and/or look of ornamental or wrought iron fences, however if they wish to have privacy, it is usually necessary to either choose a different type of product that is generally designed for privacy, such as a PVC or wood fence, or to modify a picket fence in some

way.

- [0013] One method that individuals have used in the past to modify and add privacy to picket barriers is to fasten a shade cloth or other type of opaque fabric on one side of a barrier section. However, this solution is not ideal in that the pickets are only visible from one side of the barrier and are obscured by the fabric on the other side. Additionally, the fabric tends to deteriorate relatively quickly and come unfastened from the barrier in places over time. Others have fastened rigid boards made of various materials on one side of the barrier to essentially accomplish the same objective. Again, this method has many of the same problems just described, in that the structure only looks like a picket barrier from one side.
- [0014] Another method used to modify picket barriers has been to cut out pieces of some material--usually wood--and mount the pieces in each space formed between two adjacent pickets and the rails. Although, this provides privacy and also keeps the look of a picket barrier, this solution is very limited because it is time consuming and it is not possible to efficiently manufacture in quantity one single piece that would universally fit into the spaces, as no two manufacturers products are the same and the spaces be-

tween the pickets, or a picket and a post can vary even in the same section of the barrier.

- [0015] Additionally, this solution is further complicated due to the changing nature of picket barriers. For example, in the past, most ornamental and wrought iron barriers were made of steel or iron and were constructed by welding the pickets to the rails and the rails to the posts. This method of manufacturing creates a rigid structure where the angles between the various components are generally ninety degrees and the space between two adjacent pickets and two adjacent rails is generally rectangular. It also means that on sloped or uneven ground it is usually necessary to step the barrier in sections.
- [0016] Although welded steel and iron barrier sections are still manufactured abundantly today, there are many other products available now that are made out of a variety of different materials such as aluminum, polyvinyl chloride (PVC), and fiberglass among others. Many of these products are not welded but are fastened together in a manner that allows the posts and rails, and the rails and pickets to pivot or hinge in relation to each other. These various fastening means permit the barrier sections to bias or conform to uneven ground and steep slopes without modifi-

cation to the assembled barrier section when installed. The angles between the various components on these types of barrier sections can vary by up to sixty degrees or more in some cases. The rails of these types of barriers are usually made out of U-shaped channels and the rails generally run parallel to the ground regardless of the grade; the pickets and posts are generally vertical regardless of the grade. When a barrier of this type is installed on an angled grade, the space between two adjacent pickets and two adjacent rails forms a parallelogram as opposed to a rectangle. Additionally, the actual distance between two adjacent pickets decreases when the barrier section is biased compared to when it is sitting level.

- [0017] Therefore, the solution mentioned above that involves cutting out and mounting a piece of material in the space between two pickets and rails is impractical on a large scale because of the multitude of different types of barriers and products available. Also, this solution can only be implemented after the actual barrier has been installed and the angles and spaces between the various components have been determined. As a result this particular solution is very inflexible, laborious, and time consuming to implement.

- [0018] Accordingly, prior to the development of the present invention, there has been no slat system for picket barriers that:
- [0019] (a) can provide a generally universal slat system for different barriers where the shape and size of the space between two adjacent pickets and the rail(s) or a picket, adjacent post, and the rail(s) can substantially vary, even after the slat system is installed in the barrier.
- [0020] (b) can be installed on a variety of different types of picket barriers either before or after the barrier itself has been installed so as to enable the slat system to more easily be used on new or existing barriers.
- [0021] (c) generally maintains the look of the picket barriers without obscuring the view of the pickets from one side of the barrier or by adding significant visual effects that would detract from the general look of the picket barrier.

OBJECTS AND ADVANTAGES OF THE PRESENT INVENTION

- [0022] Several objects and advantages of the present invention are:
- [0023] (a) to provide an adjustable slat system for picket barriers that adds privacy and/or decoration to the barrier.
- [0024] (b) to provide a slat system that can be installed on a picket barrier either before or after the barrier itself has

been installed so as to enable the slat system to be more easily used on both new or existing barriers.

- [0025] (c) to provide a generally universal slat system for picket barriers wherein the shape and size of the space between two adjacent pickets and the rail(s) or a picket, adjacent post, and the rail(s) can substantially vary, even after the slat system is installed in the barrier.
- [0026] (d) to provide a slat system that allows the barrier to generally retain the look and desirable characteristics of a picket barrier.
- [0027] (e) to provide a slat system that is relatively easy and quick to install.
- [0028] (f) to provide a slat system for manufacturers and/or installers of picket barriers that will allow them to compete in potentially new markets (for example, privacy fence markets) with minimal modification to their current products and/or product lines.
- [0029] Still further objects and advantages will become apparent from a consideration of the ensuing description and drawings.

BRIEF DESCRIPTION OF DRAWINGS

- [0030] Fig. 1 is a section of a picket barrier that has welded or rigid connections between the various components, show-

ing how this type of barrier would accommodate uneven terrain.

- [0031] Fig. 2 is a section of a picket barrier that has hinged connections between the various components, showing how this type of barrier would accommodate uneven terrain.
- [0032] Fig. 3A is a partial perspective and cross-sectional view of the simplest embodiment of the slat system in a picket barrier.
- [0033] Fig. 3B is a partial top and cross-sectional view of the simplest embodiment of the slat system in a picket barrier.
- [0034] Fig. 4 is a top cross-sectional view showing a second embodiment of the slat system.
- [0035] Fig. 5 is a top cross-sectional view similar to Fig. 4 showing a third embodiment of the slat system.
- [0036] Fig. 6 is a top cross-sectional view similar to Figs. 4 and 5 showing a fourth embodiment of the slat system.
- [0037] Fig. 7A is a top cross-sectional view showing the preferred embodiment of the slat system in its open position.
- [0038] Fig. 7B is a top cross-sectional view similar to Fig. 7A showing the preferred embodiment of the slat system in its closed position.
- [0039] Fig. 8A is a partial perspective and cross-sectional view

similar to Fig. 3A showing the preferred embodiment of the slat system in a picket barrier.

- [0040] Fig. 8B is a partial top and cross-sectional view similar to Fig. 3B showing the preferred embodiment of the slat system in a picket barrier.
- [0041] Fig. 9 is a partial elevation view of the slat system between two adjacent rails and two adjacent pickets on level terrain.
- [0042] Fig. 10 is a partial elevation view of the slat system between two adjacent rails and two adjacent pickets on sloped terrain.
- [0043] Fig. 11 is a partial exploded view showing another embodiment of a slat-to-barrier connection.
- [0044] Fig. 12 is a partial exploded view showing yet another embodiment of a slat-to-barrier connection.

DETAILED DESCRIPTION

FIGS. 1 AND 2, GENERAL DESCRIPTION OF PICKET BARRIERS

- [0045] In Fig. 1 and Fig. 2 picket barrier assemblies are shown that are comprised of a plurality of substantially vertical posts 20, generally parallel upper and lower rails 24, and a plurality of substantially vertical pickets 22 therethrough. While a particular configuration is depicted with vertical

pickets 22 extending the entire distance between two rails 24, it is conceivable that a particular barrier could employ three or more vertically spaced-apart rails rather than two, could have picket extensions projecting upwardly through and out of the top rail, or other variations for a variety of styles desired.

- [0046] Referring to Fig. 1 a rigid barrier assembly 28 manufactured with welded connections between the pickets 22 and the rails 24 is shown. The space between two adjacent pickets and rails in Fig. 1 is generally shaped like a rectangle 26a. In welded barrier assemblies, picket and rail connections are generally at right angles, and rail and post connections are generally at right angles as well.
- [0047] Referring to Fig. 2 an adjustable barrier assembly 29 manufactured with hinged or pivoting connections between the pickets 22 and the rails 24 are shown. The space between the pickets and rails on the sloped portions of the barrier are shaped generally like a parallelogram 26b the space between the pickets and the rails when the barrier is level is generally shaped like a rectangle 26a. The picket 22 and the rail connections are generally right angles when the barrier section is level and are generally not at right angles when the barrier section is biased. The rail 24

and the post 20 connections are generally right angles when the barrier section is level and not at right angles when the barrier section is biased. The distance between the pickets can vary and is at its greatest when the barrier is level and decreases as the barrier is biased.

FIGS. 3A AND 3B, DESCRIPTION OF A SIMPLEST EMBODIMENT OF THE SLAT SYSTEM

[0048] A simplest embodiment of the slat assembly is illustrated in Fig. 3A (perspective) and Fig. 3B (top). As illustrated, the slat system is installed between a picket 22a and a post 20a on an adjustable barrier assembly 29. The adjustable barrier assembly comprises a generally "U" shaped bottom rail 24a fastened to post 20a with a bracket 44a and a fastener 45a. Rail 24a comprises a first leg 23a and a second leg 23b extending at generally right angles off the ends of a generally horizontal wall 25. The legs of rail 24a face upward. The picket 22a is fastened to rail 24a with a fastener (not shown).

[0049] This embodiment of the slat system comprises a first slat 50a attached to a lateral face of picket 22a with a fastener 47a (shown in Fig. 3B) to form a slat-to-barrier connection 210a. A second slat 50b, of generally the same shape, is attached to a lateral face of post 20a opposite picket 22a

using a slat-to-barrier connection $210b$ so as to substantially mirror slat $50a$. Slat $50a$ and slat $50b$ overlap to form a slat-to-slat connection $220a$.

[0050] Slats $50a$ and $50b$ are generally elongate members of substantially the same construction comprising a first surface $110a$, $110b$ respectively, a second surface $115a$, $115b$ respectively, a top cross-sectional profile $120a$, $120b$ respectively, a bottom cross-sectional profile (not shown), a first lateral side $130a$, $130b$ respectively, having a slat-to-barrier connecting portion comprising a first wall $56a$, $56b$, a second wall $58a$, $58b$, and a third wall $60a$, $60b$, that are interconnected, with a gap $62a$, $62b$, between wall $56a$, $56b$, and wall $60a$, $60b$, forming an open but generally triangle-shaped raceway down the length of the slat; and second lateral side $135a$, $135b$ respectively having a slat-to-slat connecting portion comprising a laterally extending wall $54a$, $54b$ respectively.

[0051] Slat-to-barrier connecting portions $150a$ and $150b$ and fastener(s) $47a$ combine to form the slat-to-barrier connections $210a$ and $210b$ respectively. Wall $54a$ of slat $50a$ and wall $54b$ of slat $50b$ overlap to form a slat-to-slat connection $220a$.

OPERATION OF THE SIMPLEST EMBODIMENT OF THE SLAT SYSTEM

[0052] The simplest embodiment of the slat assembly may be installed on the various vertical members of a barrier before or after the barrier assembly is constructed or assembled. Referring to Fig. 3B, slat 50a is shown mounted on the lateral side of picket 22a and slat 50b is mounted opposite on post 20a. In order to mount or fasten the slats, fastener(s) 47a is inserted through gap 62a to attach wall 58a to picket 22a or to another vertical member of the barrier as may be required. The slats, in this embodiment, would be constructed of a substantially flexible material to permit one to partially open gap 62a and insert fastener(s) 47a through the gap and then have the gap substantially close so as to generally conceal the fastener(s). In this embodiment the slats overlap to form slat-to-slat connection 220a. This method of connecting the slats allows them to adjust laterally (sideways) and vertically (upward and downward) in relation to each other while still maintaining a generally private appearance. Slat-to-slat connection 220a also permits the slats to be positioned so that the surfaces are generally flush and the combined surface of both slats is generally continuous. The amount that the slats overlap depends on the distances between the vertical members of the barrier assembly.

[0053] The upward pointing legs 23a, 23b of rail 24a hide the bottom profiles of slats 50a and 50b. The top profiles of slats 50a and 50b would likely be hidden by another generally "U" shaped upper rail (not shown) with the legs pointing in a generally downward direction. The slats could be mounted in adjustable barrier assemblies 29 so that they are situated a predetermined distance above wall 25 of rail 24a and a predetermined distance below the mirroring horizontal wall of the upper rail (not shown) so as to allow for the movement of the rails in relation to vertical members of the barrier assembly and slat system.

[0054] One entire slat system fills the space between the vertical members of the barrier. Additional slat systems may then be installed in the other remaining spaces between adjacent pickets and/or the pickets and adjacent posts in the barrier assembly to make the entire picket barrier a substantially private structure. It is also conceivable that an individual(s) installing the slat system may not wish to fill every single space between adjacent pickets and pickets and posts in a particular barrier with slats, for possibly decorative or other reasons.

FIG. 4, DESCRIPTION OF A SECOND EMBODIMENT OF THE SLAT SYSTEM

[0055] Fig. 4 shows a second embodiment of the slat system. A

first slat *64b* and a second slat *65c* are mounted to picket *22b* and post *20c* respectively utilizing substantially the same slat-to-barrier connections described in the first embodiment. Slats *64b* and *65c* matingly interfit using a slat-to-slat connection *220c*.

[0056] Slat *64b* is a generally elongate member comprising a first surface *110b*, a second surface *115b*, a top cross-sectional profile *120b*, a bottom cross-sectional profile (not shown), a first lateral side *130b* having a slat-to-barrier connecting portion extending the length of the slat similar to that described in the simplest embodiment, and a second lateral side *135b* having a substantially female slat-to-slat connecting portion comprising two laterally extending walls and a groove *71b* between the walls of a predetermined depth extending the length of the slat.

[0057] Slat *65c* is a generally elongate member comprising a first surface *110c*, a second surface *115c*, a top cross-sectional profile *120c*, a bottom cross-sectional profile (not shown), a first lateral side *130c* having a slat-to-barrier connecting portion extending the length of the slat similar to that described in the simplest embodiment, and a second lateral side *135c* having a substantially male slat-to-slat connecting portion comprising a laterally extending wall *73c* of a

predetermined size extending from the body of the slat so as to matingly fit in groove 71b of slat 64b. Groove 71b and wall 73c form slat-to-slat connection 220c.

OPERATION OF THE SECOND EMBODIMENT OF THE SLAT SYSTEM

[0058] The operation of the second embodiment of the slat system is substantially the same as the simplest embodiment described previously. Slats 64b and 65c are mounted to the lateral faces of the vertical members of the barrier generally the same way using substantially the same slat-to-barrier connection (see FIGS 3A and 3B). Slats 64b and 65c matingly interconnect utilizing slat-to-slat connection 220c, which connection is laterally and vertically adjustable so as to allow the slats move in relation to each other as may be required by the position of the picket barrier. Slat-to-slat connection 220c also allows the surfaces of the slats to be situated generally flush and the combined surfaces of the slats to be generally continuous.

FIG. 5, DESCRIPTION OF A THIRD EMBODIMENT OF THE SLAT SYSTEM

[0059] The third embodiment of the slat system shown in Fig. 5 is different from the second embodiment in that the slats incorporate alternate slat-to-barrier connections. A mounting insert 66d is attached vertically to the lateral

face of a picket $22d$ with a fastener(s) $45d$. A second mounting insert $66e$, that is generally the same shape as insert $66d$, is mounted on the lateral face of a post $20e$ on the opposite side of the space so the inserts generally mirror each other. Inserts $66d$ and $66e$ have generally "U" shaped top cross-sectional profiles with a flange on the end of each leg. A first slat $70d$ and a second slat $72e$ matingly connect to inserts $66d$ and $66e$ respectively, each on an opposite side of the opening forming slat-to barrier connections $210d$ and $210e$ respectively. Slat $70d$ and $72e$ matingly fit together forming a slat-to-slat connection $220e$ similar to that described in the second embodiment of the slat system.

[0060] Slat $70d$ is a generally elongate member comprising a first surface $110d$, a second surface $115d$, a top cross-sectional profile $120d$, a bottom cross-sectional profile (not shown), a first lateral side $130d$ having a slat-to-barrier connecting portion comprising two flanged legs $38d$ extending longitudinally the length of the slat, and a second lateral side $135d$ having a slat-to-slat connecting portion comprising two extending walls and a groove $71d$ between the walls of a predetermined depth extending longitudinally the length of the slat. Legs $38d$ may snapedly or slidably con-

nect to insert 66d to form slat-to-barrier connection 210d.

[0061] Slat 72e is a generally elongate member comprising a first surface 110e, a second surface 115e, a top profile 120e, a bottom profile (not shown), a first lateral side 130e having a slat-to-barrier connecting portion comprising two flanged legs 38e extending longitudinally the length of the slat, and a second lateral side 135e having a slat-to-slat connecting portion comprising a laterally extending wall 73e extending longitudinally the length of the slat that matingly fits in groove 71d of slat 70d. Legs 38e snapedly or slidably attach to insert 66e to form slat-to-barrier connection 210e. Wall 73e and groove 71d matingly connect to form slat-to-slat connection 220e.

OPERATION OF THE THIRD EMBODIMENT OF THE SLAT SYSTEM

[0062] Referring to Fig. 5, in this embodiment inserts 66d and 66e are fastened to the pickets or posts with a fastener(s) 45d. Inserts 66d and 66e may be elongated and run longitudinally down the entire length of the vertical member of the barrier or they may be relatively shorter in length, and/or multiple mounting inserts could be attached along the face of the vertical member at various points. The slat-to-barrier connections 210d, 210e allow slats 70d and 72e respectively to move vertically (up and down) in relation to

the vertical members of the barrier to which they are substantially attached. Slats $70d$ and $72e$ to connect to inserts $66d$ and $66e$ respectively to form slat-to-barrier connections $210d$ and $210e$ respectively. Slats $70d$ and $72e$ matingly interconnect by way of a slat-to-slat connection $220e$ that generally allows the slats to adjust or move vertically and laterally a predetermined amount in reference to each other. Slat-to-slat connection $220e$ also allows the surfaces of the slats to be situated generally flush with each other and the combined surfaces of the slats to be generally continuous.

FIG. 6, DESCRIPTION OF A FOURTH EMBODIMENT OF THE SLAT SYSTEM

[0063] Fig. 6 shows a fourth embodiment of the slat system. This embodiment utilizes generally the same slat-to-barrier connections as described previously in the third embodiment (shown in Fig. 5). The difference in this embodiment is that an additional slat is added to the system and the slats are connected to each other using alternate slat-to-slat connections. Inserts $66f$ and $66g$ attach to the lateral sides of picket $22f$ and post $20g$ respectively. A slat $74f$ is attached to insert $66f$ forming a slat-to-barrier connection $210f$. Slat $74f$ is mirrored by a second slat $74g$, that is substantially the same construction, fastened to slat $66g$.

on the opposite side of the opening forming a slat-to-barrier connection 210g. A third slat 76h fastens to lateral edges of slats 74f and 74g forming a slat-to-slat connection 220f, 220g respectively, effectively interconnecting the three slats.

[0064] Slats 74f and 74g are generally elongate members of substantially the same construction comprising a first surface 110f, 110g respectively, a second surface 115f, 115g respectively, a top cross-sectional profile 120f, 120g respectively, a bottom cross-sectional profile (not shown), a first lateral side 130f, 130g respectively, having a slat-to-barrier connecting portion comprising two flanged legs 38f, 38g respectively, a second lateral side 135f, 135g having a slat-to-slat connecting portion comprised of two flanged legs with a gap 75f, 75g between the flanges of a predetermined width extending longitudinally down the slat.

[0065] Slat 76h is a generally elongate member comprising a first surface 110h, a second surface 115h, a top cross-sectional profile 120h generally shaped as an "I" channel, bottom cross-sectional profile (not shown) , a first lateral side 130h having a slat-to-slat connecting portion comprising a generally arrow-shaped flange 78f, and a second lateral side 135h having a slat-to-slat connecting portion com-

prising a generally arrow-shaped flange 78g. Flange 78f matably fits into gap 75f to form slat-to-slat connection 220f, and flange 78g matably fits into gap 75g to form slat-to-slat connection 220g.

OPERATION OF THE FOURTH EMBODIMENT OF THE SLAT SYSTEM

[0066] Slats 74f and 74g fasten generally the same way to the vertical members of the barrier as described in the third embodiment (shown in Fig. 5). Referring to Fig. 6, the fourth embodiment of the slat system shows alternative slat-to-slat connections 220f and 220g comprising flanged matable members that hold the slats 74f, 76h, and 74g substantially securely together. Slat-to-slat connections 220f and 220g are laterally and vertically adjustable allowing the slats to move in relation to each other as may be required by the position of the barrier. Slat-to-slat connections 220f and 220g also permit the surfaces of the slats to be situated generally flush with each other so that the combined surfaces of the slats are generally continuous.

FIGS 7A TO 10, DESCRIPTION OF A PREFERRED EMBODIMENT OF THE SLAT SYSTEM

[0067] The following description can be most clearly seen in the top cross-sectional view shown in Fig. 7A. The preferred

embodiment of the slat system 100 is comprised principally of five interconnected slats mounted in the space between vertical members of a picket barrier. A first slat 80*i* mounts to a vertical member (not shown) of the barrier utilizing a slat-to-barrier connection 210*i*, a second slat 80*j* of substantially the same shape is mounted on the opposite side of the opening utilizing a slat-to-barrier connection 210*j* so as to mirror slat 80*i*. A third slat 82*k* matably attaches to slat 80*i* by means of a slat-to-slat connection 220*i*. A fourth slat 82*n* matably attaches to slat 80*j* utilizing a slat-to-slat connection 220*j*. A fifth slat 84*m* matably interconnects slats 82*k* and 82*n* by means of a slat-to-slat connection 220*k* and 220*n* respectively.

[0068] Slats 80*i* and 80*j* are generally elongate members of substantially the same construction comprising a first surface 110*i*, 110*j* respectively, a second surface 115*i*, 115*j* respectively, a top cross-sectional profile 120*i*, 120*j*, generally shaped as a "C" channel, a bottom profile (not shown), a first lateral side 130*i*, 130*j* having a slat-to-barrier connecting portion comprising a generally flat wall, and a second lateral side 135*i*, 135*j* having a slat-to-slat connecting portion comprising two flanged arms with a gap 75*i*, 75*j*, between them extending longitudinally along the

slat.

[0069] Slats *82k* and *82n* are generally elongate members of substantially the same construction comprising a first surface *110k*, *110n* respectively, a second surface *115k*, *115n*, a top cross-sectional profile *120k*, *120n*, a bottom cross-sectional profile (not shown), a first lateral side *130k*, *130n* having a slat-to-slat connecting portion comprising a generally arrowhead-shaped flange *43k*, *43n*, and a second lateral side *135k*, *135n* having a slat-to-slat connecting portion comprising of a first outer arm *89k*, *89n*, a second middle flanged arm *90k*, *90n*, and a third outer arm *91k*, *91n* that extend generally laterally from the body of the slat. Each slat having two grooves *86k*, *86n* respectively of a predetermined depth, formed between the extending arms.

[0070] Slat *84m* is a generally elongate member comprising a first surface *110m*, a second surface *115m*, a top cross-sectional profile *120m* generally shaped as an "H" channel, and a bottom cross-sectional profile (not shown), a first lateral side *130m* with slat-to-slat connecting portion comprising two flanged arms *88k* with a groove *81k* between them extending the length of the slat, and a second lateral side *135m* having a slat-to-slat connecting portion

comprising flanged arms 88*l* with a groove 81*n* between them extending the length of the slat.

- [0071] Extending arms 88*k* of slat 84*m* matably fit into grooves 86*k* of slat 82*k* respectively, additionally arm 90*k* of slat 82*k* matably fits into groove 81*k* of slat 84*m* to form slat-to-slat connection 220*k*. Extending arms 88*n* of slat 84*m* matably fit into grooves 86*n* of slat 82*n*, additionally arm 90*n* of slat 82*n* matably fits into groove 81*n* of slat 84*m* to form slat-to-slat connection 220*n*.
- [0072] Fig. 7B shows the same embodiment of the fence system as described in Fig. 7A, the difference in Fig. 7B being that the slats are in a different position in relation to each other. Figs. 8A (perspective view) and 8B (top view) show the preferred embodiment of the slat system 100 as it might look between a picket 22*r*, a post 20*r*, and a generally "U" shaped bottom rail 24*r* in a portion of an adjustable barrier assembly 29 similar to that illustrated in Figs. 3A and 3B.
- [0073] Fig. 8B also illustrates an alternate clip-type fastener 49 which has a cross-section as shown and a predetermined width. A first generally flexible and "V" shaped flange 51*a* is mounted on one end of a straight section 53 and a second generally flexible and "V" shaped flange 51*b* is

mounted on the other end.

[0074] Fig. 9 is an elevation view that shows the preferred embodiment of the slat system 100 installed in an adjustable fence assembly 29 which is in level position. The slat system is installed between a first picket 22o and a second picket 22p that attached to a generally "U" shaped bottom rail 24o and a generally "U" shaped upper rail 24p.

[0075] Fig. 10 depicts the same section of fence as described in Fig. 9, the difference being that the adjustable fence assembly 29 is in a biased or angled position. The rails and pickets are connected at different angles and the distance 30 between the pickets has decreased.

OPERATION OF THE PREFERRED EMBODIMENT OF THE SLAT SYSTEM

[0076] Referring to Figs. 8A and 8B, slat 80i is fastened to picket 22n by way of slat-to-barrier connection 210i . Slat 80j is connected to post 20n by means of slat-to-barrier connection 210j so that slats 80i and 80j substantially mirror each other across the space. Slats 82k and 82n attach to slats 80i and 80j respectively by means of slat-to-slat connections 220i and 220j respectively. Slat-to-slat connections 220i and 220j allow the slats to move vertically in relation to each other.

[0077] One lateral side of slat 84m connects to slat 82k by means

of slat-to-slat connection 220*k*, the other lateral side of slat 84*m* attaches to slat 82*n* utilizing slat-to-barrier connection 220*n*. Slat-to-slat connections 220*k* and 220*n* are of such a nature so as to allow the slats to adjust laterally and/or vertically in relation to each other yet still remain substantially securely joined. This slat-to-slat connection means also allows the surfaces of the slats to be situated generally flush with each other so that the combined surfaces of the slats are generally continuous.

- [0078] Fig. 7A shows the preferred embodiment of the slat system in its open position, or in other words, slat 82*k*, slat 82*n*, and slat 84*m* are moved laterally as far apart as is generally possible. Fig. 7B shows the preferred embodiment of the slat assembly in its closed position, or in other words, slat 82*k*, slat 82*n*, and slat 84*m* are moved laterally as close together as is generally possible.
- [0079] Fastener 49 works by one end being pushed through or snapped into aligned holes (not shown) in the vertical members of slat system and the barrier assembly until the arms of flange 51*a* come through the other side of the hole and catch to fasten the members together.
- [0080] Fig. 9 shows how the slats may sit when the adjustable barrier assembly is on level ground. The bottom edge of

the preferred embodiment of the slat system sits between the legs (the legs are not shown) of a generally "U" shaped bottom rail *24o* where the legs of the rail are facing in a generally upwards direction. The legs of rail *24o* generally hide the lower edge of the slat system from view. The top edge of the slat system sits between the legs (not shown) of a generally "U" shaped upper rail *24p* in which the legs are facing in a generally downward direction. The legs of rail *24p* generally hide the top edge of the slat system from view.

[0081] Fig. 10 shows how the slats may sit when the adjustable barrier assembly is biased or installed on an angle. As illustrated, the slats are able move vertically and laterally in relation to each other in order to compensate for the different position of the barrier. The following can be seen if one compares Fig. 9 to Fig. 10. Rails *24o* and *24p* B are in different position, there is a different angle between rails *24o* and *24p* and pickets *22o* and *22p*, the space between the members of the barrier is a different shape, the distance *30o* between pickets *22o* and *22p* has decreased in Fig. 10. Additionally, biasing causes the slat system to have a jagged or uneven bottom and top edge as adjacent slats sit at different levels in relation to one another. If

seen, this effect would be generally undesirable, as it would not completely block vision through the barrier in these areas and it could be considered unsightly. However, this is overcome, as illustrated in Fig. 10, by hiding uneven bottom edges of the slat system with the upward pointing legs of rail 24*o* and hiding the uneven top edges of the slats with the downward pointing legs of rail 24*p*. In practice, the top and bottom edges of the slat system could usually be hidden in the manner just described as most adjustable barrier assemblies manufactured today use generally "U" shaped channels for rails. However, if the slat system is installed in a barrier assembly that biases, but is not made with generally "U" shaped rails, one could fasten additional pieces of generally "U" shaped channels to the rails between the vertical members of the barrier so as to enclose the top and bottom of the slat system if necessary.

DESCRIPTION AND OPERATION OF ALTERNATIVE SLAT-TO-BARRIER CONNECTIONS

[0082] Figs. 11 and 12 show alternative slat-to-barrier connections. Fig. 11 shows an embodiment of a picket or post 94 having a slat-to-barrier connecting portion comprising a gap or recess 93 running longitudinally down the lateral

side(s) so as to allow a slat 101 with a substantially male slat-to-barrier connecting portion 95 to matingly, snapedly, or slidably engage to recess 93.

[0083] Fig. 12 shows an embodiment of a picket or post 96 having a slat-to-barrier connecting portion comprising a flanged ridge 97 running longitudinally down the lateral side(s) so as to allow a slat 102 having a substantially female slat-to-barrier connecting portion 98 to matingly, snapedly, or slidably connect to ridge 97.

CONCLUSIONS, RAMIFICATIONS, AND SCOPE

[0084] Accordingly, the reader will see that the slat system for picket barriers described herein can be used to add privacy and/or decoration to a picket barrier, can be installed either before after the barrier itself has been installed so as to enable the slat system to be more easily used on both new or existing barriers, can be used as a generally universal slat system that can adapt to most types of picket barriers. The slat system can also be incorporated into a picket barrier while still maintaining the general style of the barrier and many of its desirable characteristics such as aesthetic look, strength, security, and the like. Part of this objective is accomplished through connections that allow the slats surfaces to sit generally flush with one

another and the combined surfaces to be generally continuous. Furthermore, manufacturers and installers of picket barriers will be able to incorporate the slat system into their existing products with relatively little modification, which may allow them to compete in additional markets with the same products.

[0085] Although the description above contains many specificity's, these should not be construed as limiting the scope of the invention but as merely providing illustrations of some of the presently preferred embodiments of this invention as obvious modifications and equivalents will be apparent to one skilled in the art; for example, it is also feasible to add additional vertical members or slats to the slat system over and above that which is described or illustrated herein. Additionally, the slats could have other shapes and cross-sectional designs. Textures and patterns may be added to the slats simply for decorative purposes or to give them the appearance of other products, materials, or items such as wood, a hedge, bricks, and the like. Additionally, the slat system may be manufactured and used not solely for the intent of adding privacy to a barrier, but also to increase the aesthetic appeal or to add ornamentation by possibly incorporating designs, and/or

patterns, and the like, that may also allow one to partially see through the barrier.

- [0086] Additionally, the slats could be fastened to the generally vertical members of a picket barrier by a number of different connecting means, including, but not limited to screws, nuts and bolts, clips, nails, snaps, tacks, bands, brackets, rivets, adhesion, welding, mated connections, and the like.
- [0087] Furthermore, a number of means for connecting or interconnecting the elongated members such as slats, pickets, posts, and the like have been described in the various embodiments of the slat system. In reality, any of these connective means, or variations thereof described above, could be interchanged or modified slightly to be incorporated into any one of the embodiments of the slat system heretofore described. Additionally, other suitable connective means that allow elongated members to move vertically and/or laterally in relation to the other could also be incorporated into this invention as a means for interconnecting the generally vertical members.
- [0088] The slats and other components could also be made out of a number of different materials. In the preferred embodiment, the slat system is preferably extruded from

polyvinyl chloride (PVC); however, the slats may also be manufactured using any suitable thermoplastic material such as, but not limited to, polypropylene, polyethylene, low density polyethylene (LDPE), vinyl acetate copolymers, vinyl chloride monomers (VCM), or acrylonitrile–butadiene–styrene (ABS), which may have the requisite durability, strength, and flexibility characteristics which may be necessary for the invention as described. Furthermore, slats may also be manufactured using other materials and/or processes. For example, the slats may be molded from suitable thermoplastic material, or extruded or formed out of fiberglass. Additionally, the components may be extruded, formed by a die, formed by rolling, or formed by bending metals or metallic alloys.

[0089] Thus the scope of the invention should be determined by the appended claims and their legal equivalents, rather than by the examples given.